Sub A17

Abstract of the Disclosure

The technique of amplifier sharing is implemented in a system designed to accommodate transmit diversity. In one embodiment of the invention, the amplifiers are shared 1) to amplify a first and a second diversity-encoded signal, each of which represents the information of a first signal that is to be transmitted using transmit diversity, and 2) to amplify a second signal to be transmitted without using transmit diversity. The first and second diversity-encoded signals are used to form a first and a second composite signal. Each composite signal is amplified in a different one of two power amplifiers. Each amplified composite signal is then used to form an amplified first diversity-encoded signal and an amplified second diversity-encoded signal. The first and second composite signals can also be formed using the second signal. Each composite signal is then amplified in a different one of the two power amplifiers and the two amplified composite signals are used to form an amplified second signal. In another embodiment of the invention, the first and second composite signals can be formed in the digital domain. Each composite signal is digitally pre-distorted and then modulated onto a transmission frequency signal, such as an RF signal. Each pre-distorted composite signal is then amplified in the respective amplifier.